

Silizium-Fotodiode mit $V\lambda$ Charakteristik
Silicon Photodiode with $V\lambda$ Characteristics
Lead (Pb) Free Product - RoHS Compliant
SFH 2430



Wesentliche Merkmale

- Spektrale Empfindlichkeit angepasst an die Augenempfindlichkeit ($V\lambda$)
- Niedriger Temperaturkoeffizient der Fotoempfindlichkeit
- Gute Linearität
- DIL-Plastikbauform mit hoher Packungsdichte
- Geeignet für Vapor-Phase Löten und IR-Reflow Löten (JEDEC level 4)

Anwendungen

- Umgebungslichtsensor (Handy, Regensensor, Klimaanlagesteuerung)

Features

- Spectral sensitivity adapted to Human Eye Sensitivity ($V\lambda$)
- Low temperature coefficient of spectral sensitivity
- high linearity
- DIL plastic package with high packing density
- Suitable for vapor-phase and IR-reflow soldering (JEDEC level 4)

Applications

- Ambient light sensor (Mobile phone, rain sensor, regulation of air conditioning)

Typ Type	Bestellnummer Ordering Code
SFH 2430	Q65110A2673

Grenzwerte**Maximum Ratings**

Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Betriebs- und Lagertemperatur Operating and storage temperature range	$T_{op}; T_{stg}$	- 40 ... + 100	°C
Sperrspannung Reverse voltage	V_R	6	V
Verlustleistung, $T_A = 25\text{ °C}$ Total power dissipation	P_{tot}	150	mW

Kennwerte ($T_A = 25\text{ °C}$, Normlicht A, $T = 2856\text{ K}$)**Characteristics** ($T_A = 25\text{ °C}$, standard light A, $T = 2856\text{ K}$)

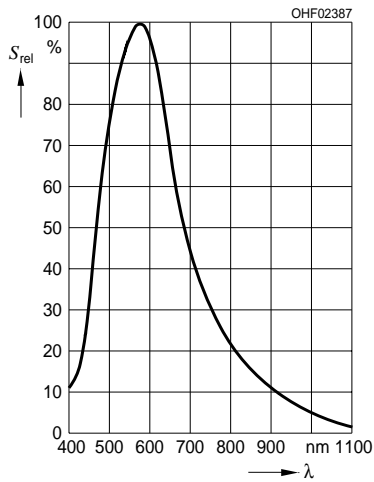
Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Fotoempfindlichkeit, $V_R = 5\text{ V}$ Spectral sensitivity	S	5.8 (>4)	nA/lx
Wellenlänge der max. Fotoempfindlichkeit Wavelength of max. sensitivity	$\lambda_{S\ max}$	570	nm
Spektraler Bereich der Fotoempfindlichkeit $S = 10\%$ von S_{max} Spectral range of sensitivity $S = 10\%$ of S_{max}	λ	400 ... 900	nm
Bestrahlungsempfindliche Fläche Radiant sensitive area	A	7.00	mm ²
Abmessung der bestrahlungsempfindlichen Fläche Dimensions of radiant sensitive area	$L \times B$ $L \times W$	2.65 × 2.65	mm × mm
Halbwinkel Half angle	φ	± 60	Grad deg.
Dunkelstrom, $V_R = 5\text{ V}$ Dark current	I_R	0.1 (<5)	nA
Spektrale Fotoempfindlichkeit, $\lambda = 550\text{ nm}$ Spectral sensitivity	S_λ	0.17	A/W
Anstiegs- und Abfallzeit des Fotostromes Rise and fall time of the photocurrent $R_L = 50\text{ k}\Omega$; $V_R = 5\text{ V}$; $\lambda = 550\text{ nm}$	t_r, t_f	200	µs
Durchlaßspannung, $I_F = 100\text{ mA}$, $E = 0$ Forward voltage	V_F	1.2	V

Kennwerte ($T_A = 25\text{ °C}$, Normlicht A, $T = 2856\text{ K}$)**Characteristics** ($T_A = 25\text{ °C}$, standard light A, $T = 2856\text{ K}$) (cont'd)

Bezeichnung Parameter	Symbol Symbol	Wert Value	Einheit Unit
Kapazität, $V_R = 0\text{ V}$, $f = 1\text{ MHz}$, $E = 0$ Capacitance	C_0	1000	pF
Temperaturkoeffizient von I_{SC} Temperature coefficient of I_{SC}	TC_1	0.16	%/K

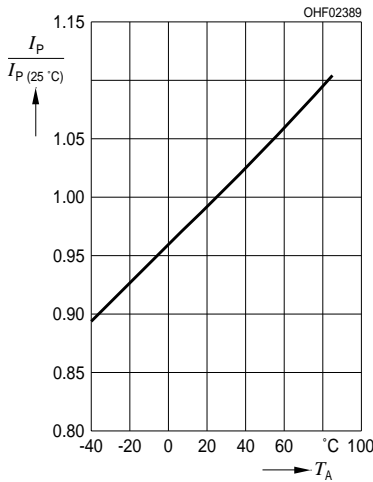
Relative Spectral Sensitivity

$S_{rel} = f(\lambda)$



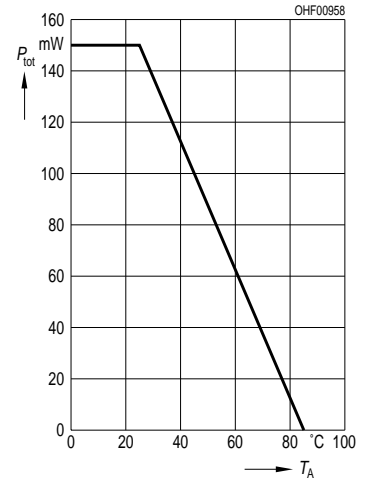
Photocurrent $I_P/I_{P(25^\circ C)} = f(T_A)$

$E_v = 1000 \text{ lx}, V_R = 5 \text{ V}$



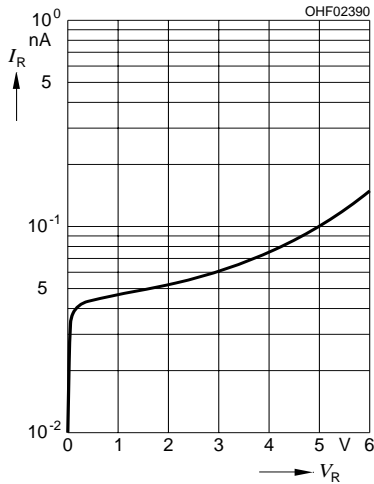
Total Power Dissipation

$P_{tot} = f(T_A)$



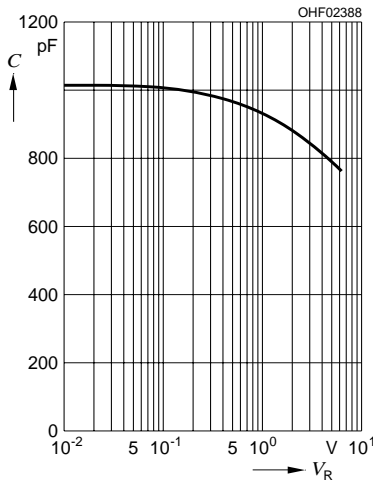
Dark Current

$I_R = f(V_R), E = 0$



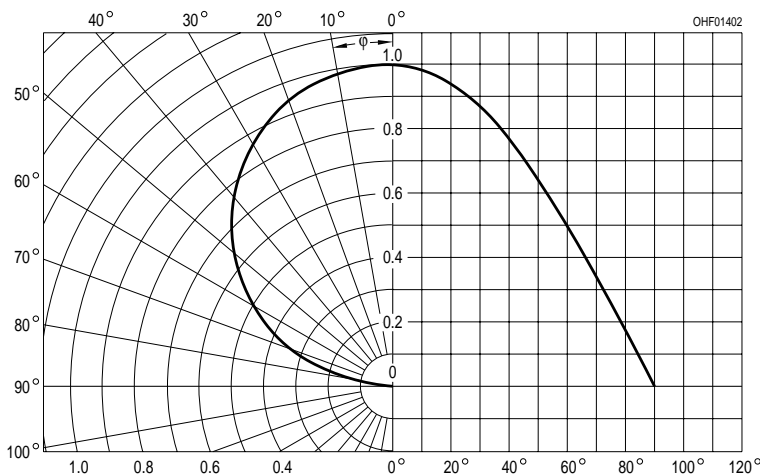
Capacitance

$C = f(V_R), f = 1 \text{ MHz}, E = 0$

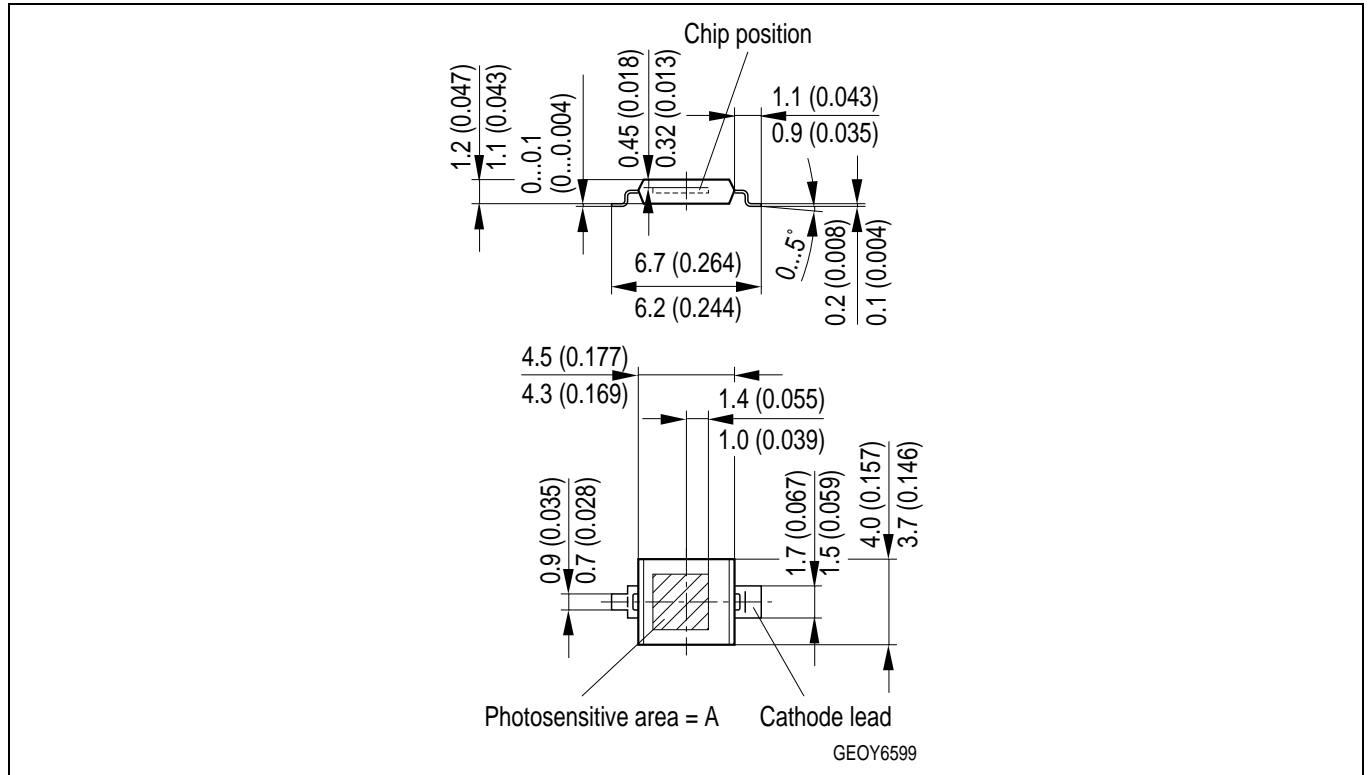


Directional Characteristics

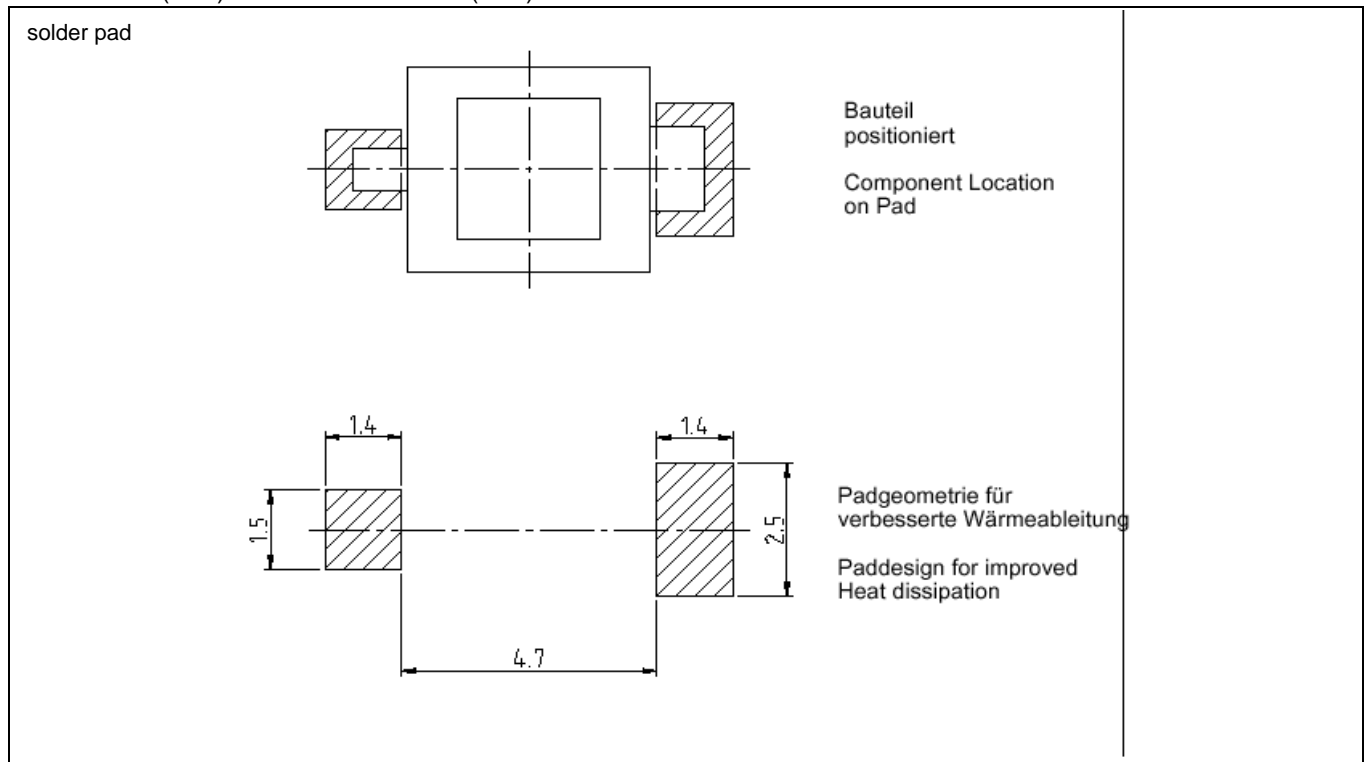
$S_{rel} = f(\varphi)$



**Maßzeichnung
Package Outlines**



Maße in mm (inch) / Dimensions in mm (inch).



Maße in mm / Dimensions in mm

2007-04-03

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Lötbedingungen

Soldering Conditions

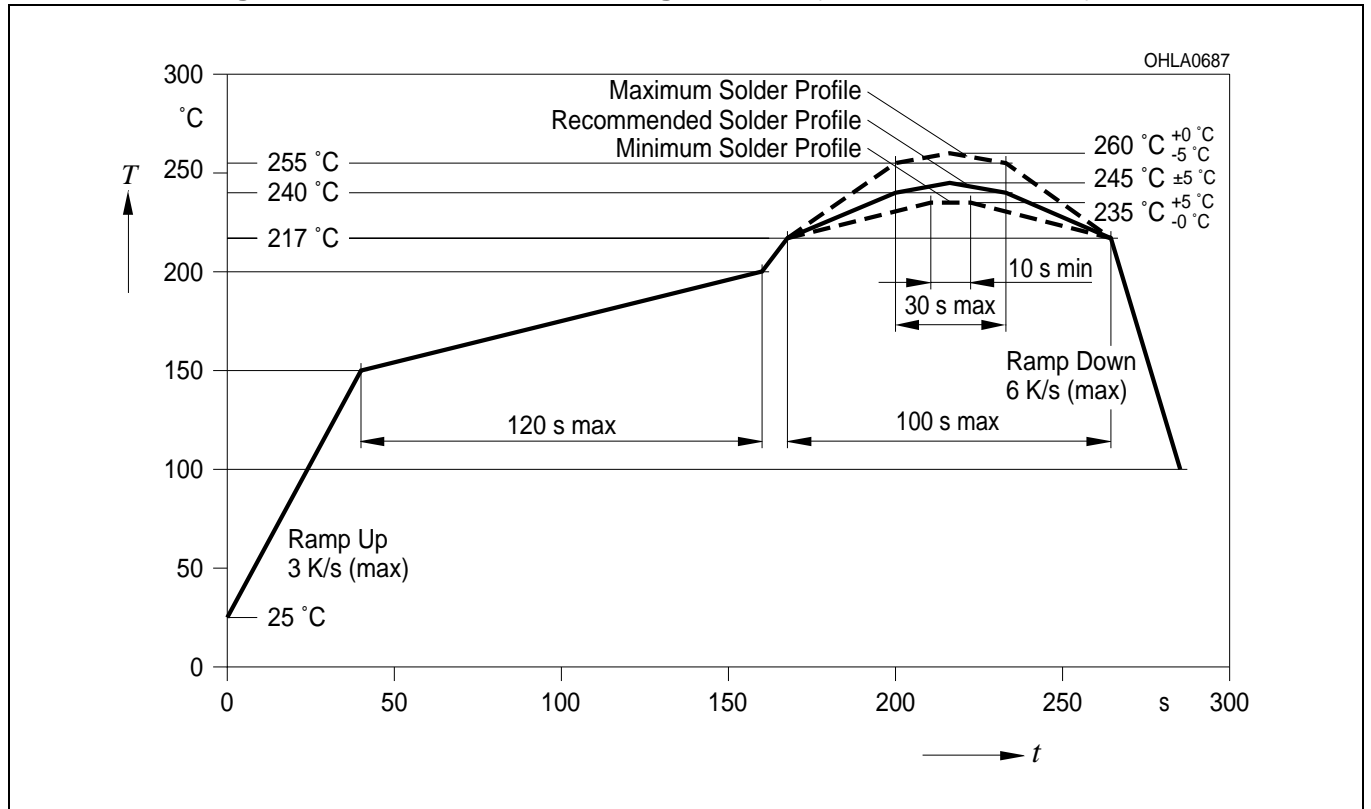
Reflow Lötprofil für bleifreies Löten

Reflow Soldering Profile for lead free soldering

Vorbehandlung nach JEDEC Level 4

Preconditioning acc. to JEDEC Level 4
(nach J-STD-020C)

(acc. to J-STD-020C)



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EU RoHS and China RoHS compliant product



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